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COMMERCIAL BANKING AND CAPITAL FORMATION
IV

I. INTRODUCTION

The discussion of banking operations in the preceding articles of this series[1] no doubt appeared somewhat remote from the subject of capital formation—meaning by capital formation the creation of material instruments of production as distinguished from liquid funds in the form of bank circulating media. The foregoing detailed analysis of the connection between commercial banking and the investment market was deemed necessary, however, as a foundation for a study of the relation of bank credit instruments to the process of capital formation under conditions imposed by a specialized and pecuniarily organized society. The present paper will therefore attempt to indicate the connection between the expansion of loanable funds that has resulted from the organization of our banking machinery and the creation of capital goods.

It has already been indicated[2] that capital formation as treated in economic literature has been generally regarded as a very simple phenomenon. To insure an adequate provision for the future all that is considered necessary is for the individual members of society to exercise the honest, if homely, virtue of thrift—to *save* by

[1] See *Journal of Political Economy*, XXVI (May, June, July, 1918).

[2] *Ibid.* (May, 1918).

foregoing consumptive satisfactions. Two factors appear to have conspired to divert attention away from the processes by which, in our modern pecuniary society, individual savings of monetary income are transformed into capital equipment: First, the dominance in economic literature of the theory of value and distribution has required (*a*) explanation, if not justification, of interest on capital as one of the distributive shares, and (*b*) elaborate analysis of the psychology of saving.[1] Second, the resolution of material instruments into pecuniary values has tended to camouflage the processes by which pecuniary savings eventuate into capital equipment. It is recognized that this latter statement means little as it stands. It is presented at this place merely as a challenge and as an explanation for preceding a discussion of the relation of commercial banking to capital formation by a discussion of capital formation itself.

Before considering the rôle of commercial banking in capital formation this paper will discuss (*a*) the process of capital formation under primitive or pioneer conditions, (*b*) the changes in the process that resulted from the development of specialization and exchange, and (*c*) the complications that are introduced by the necessity, under modern conditions, of effecting the formation of capital through the pecuniary mechanism.

[1] This is not the place to enlarge upon the foregoing statement. I think it will be readily agreed, however, that neither the classical economists nor the productivity and discount theorists were concerned, when writing on interest and saving, with the processes by which the transmutation of individual savings into capital goods is effected under modern industrial conditions. The analysis of and emphasis upon interest by the classicists was largely a result of the attacks leveled against this distributive share by the socialist school. . To explain or justify interest it was necessary to show that the creation of capital involved a sacrifice or cost which was as much entitled to a reward as labor and which if unrewarded would not be undergone. While perhaps not so directly motivated by polemical requirements the discount theorists have maintained much the same point of view. Their analysis is mainly elaboration and refinement of the cruder conceptions of abstinence and sacrifice. The productivity theories are also designed to explain interest; but they do not explain capital formation. And both the agio and productivity schools take for granted the institutional system through which these savings are wrought into capital equipment. As a result of this situation economic literature contains no adequate theory of capital formation. It is only in the literature of crises that the problem is even definitely considered. Let me hasten to add that this paper does not supply the great deficiency. It is intended merely as a tentative analysis of certain neglected phases of the problem.

II. CAPITAL FORMATION UNDER PRIMITIVE CONDITIONS

If we are to understand the process of capital formation we must look to the factors which determine the apportionment of productive energy between the creation of consumption goods and the creation of capital goods. The old illustration of the primitive fisherman who forewent consumption and tightened his belt in order that he might have time available for the fashioning of a net with which to enlarge his productive power in the future does not quite reach the crux of the problem, because its animus is to emphasize the sacrifice involved in postponing consumption. Now a fortunate catch by the fisherman, so large that it was impossible to consume it all in a single day, thus freeing time for the making of a net, is of course quite as plausible an explanation of the origin of capital. What needs to be emphasized for our present purpose is that if an individual is to increase his productive power by the use of capital he must, under primitive conditions where exchange does not exist, devote a portion of his time to the creation of capital goods—he cannot devote it exclusively to the creation of consumption goods.

Under the conditions of pioneer life in America capital goods were largely created by this direct apportionment of energy between the creation of consumptive and capital goods. The pioneer farmer as a matter of routine devoted those portions of the year during which it was impossible for him to plant, cultivate, or harvest his crops to the digging of ditches, the clearing and improving of land, the construction of farm buildings, the creation of public roads, etc. Since the farming classes made up the greater portion of our population until after the Civil War, it is safe to say that the larger portion of the capital equipment of America came in those days as a result of an individual process of utilizing in the creation of capital goods portions of the year which could not in the nature of things be utilized in the production of consumers' goods.[1]

[1] It goes without saying that in some parts of the country this situation still obtains. It goes without saying, also, that it is only under the most primitive conditions that pecuniary investment plays no part in making provision for the future, and that there has been a steadily increasing proportion of farm savings that take the form of pecuniary investments.

It should be added here that so long as land was abundant and improvements scanty there was little check to the profitable creation of capital goods. A home with possession of fertile land adapted to the production of the necessities of life was at once a means to the gratification of consumptive and social desires and a guaranty against want in old age.

It may be of interest to note in passing that capital formation under these conditions was not primarily a result of abstinence, or time preference, or impatience. Such capital formation was accompanied by little or no diminution in immediate consumption. Save in exceptional instances, the days of the year which were utilized in the creation of capital goods could not have been utilized in the creation of consumers' goods. The alternative to capital formation was thus not larger consumption but idleness.[1] To the extent that foregoing leisure may be regarded as sacrifice of pleasure there was of course a form of abstinence here involved. But it is questionable if more than the merest fraction of this foregoing of leisure can be regarded as involving sacrifice. To the "old man" who led the way and "bossed" the job the work involved in improving the farm, etc., was "pure joy of creation." To the offspring capital formation was no doubt often irksome; some leisure was greatly desired. But it may be reflected here, also, that with the limited opportunities for diversion which the conditions of pioneer life afforded, work was the chief form of recreation. Certainly the building of public roads by the community in off seasons can under no circumstances be regarded as involving abstinence or sacrifice, for it afforded one of the few opportunities for intimate association with one's neighbors and for acquiring on the part of each the community accumulation of sundry gossip and "enlightening" stories.[2] But whether or not one agrees that these savings were largely controlled by other factors than abstinence or sacrifice in the sense that the economist has used these terms, it is clear that the process of creating capital goods was the direct one of individual apportionment of productive energy between the

[1] To be sure, one could always hunt or fish.

[2] If "impatience" was involved, it was impatience to be through with the harvesting of consumptive goods and to undertake the creation of new public highways.

creation of consumptive and capital goods. It is of note, also, that this creation of capital goods was directed and accomplished by individuals who were also producers of consumers' goods; that it was not dependent upon the successful working of a complex industrial and pecuniary social organization; and, finally, that the capital goods created were largely owned and used directly by those who created them.

III. CAPITAL FORMATION IN A SPECIALIZED SOCIETY

a) *The changed nature of the process.*—Capital formation under conditions of specialized production and exchange is very different from what it is under a simpler organization of society. The change in the nature of the process may be briefly indicated. Mr. Jones produces goods for Mr. Smith's consumption. Smith in turn produces goods for Jones's consumption. Now if Jones curtails his consumption in obedience to a thrifty impulse or a desire to secure a competency for old age, he curtails the demand for Smith's goods and thus reduces Smith's production. And if Smith has a similar urge to save, he in turn reduces the production required of Jones. It is obvious that under such circumstances saving would not lead to the creation of additional productive equipment; on the contrary it would result in only part-time use of existing capital equipment and lead to many hours of leisure on the part of Jones and Smith as producers.[1] And if Jones and Smith are divorced from land, neither has any opportunity to employ his leisure hours in direct creation of capital goods as a provision for old age.

While it is easy to see the interdependency of large consumption and new capital formation in this simple illustration of isolated individuals, such relationship is usually overlooked in the complicated specialization and exchange which characterizes our present-day industrial society; and it is generally assumed that individual retrenchment in consumption is the royal road to new capital formation.[2] The confusion arises from isolating the individual. If I am

[1] On the other hand, if each increases his consumption there will be an incentive for each in his productive capacity to strive to increase his productive equipment in order to meet the increased consumptive demand.

[2] Section IV discusses the influence that is exerted in this connection owing to the fact that savings are now effected in pecuniary form.

thrifty while everybody else consumes as usual, there is certain to be an effective demand for the products of the capital goods which are created as a result of my saving, and hence provision for my old age is assured. But if everybody rigidly economizes, the situation is entirely different. Universal thrift is a fallacy. We can have the requisite demand for the creation of new capital goods only so long as consumption is steadily expanding.

We have argued here that large consumption is necessary to induce large production and the creation of additional capital goods; and it would appear to follow from this that the increase of capital equipment would be most rapid when there is a large consumptive demand and hence large production of consumers' goods. But since capital formation involves the utilization of a portion of our limited supply of productive energy, it may be asked: Does not any increase in the production of consumptive goods necessarily decrease the energy available for the production of capital goods and thereby retard the rate of new capital formation? It appears like a mathematical impossibility.

Two supposititious cases may be taken for the purpose of illustrating the possibility of a more rapid increase of capital when consumption is high than when it is low. First, suppose that as a result of large consumption 75 per cent of our energy were devoted each year to the production of consumers' goods, 15 per cent to the replacement of existing capital goods, and 10 per cent to the creation of new capital goods. Now suppose that because consumption is kept low only 60 per cent of our productive energy is devoted to the creation of consumers' goods, 15 per cent to the replacement of existing capital goods, and 5 per cent to the production of new capital goods. Under these circumstances it would take twice as long to double the existing supply of capital goods as in the former case. The validity of this illustration obviously depends upon the validity of the assumption that only 80 per cent of the available energy of society is employed in the second case.[1] If the analysis that has been made above of the relationship between consumptive demand and the formation of additional capital is sound this assumption is a valid one. The

[1] Of course the percentages here used are mere guesses.

balance of our available energy, i.e., 20 per cent, will not be devoted to the creation of new capital, because, by hypothesis, the demand for the products of capital goods has decreased. It is believed, moreover, that there is evidence to substantiate this conclusion.[1] But before submitting this evidence, it will prove of interest to present a tentative statement of the more significant results of the situation which we have been portraying.

b) *Some results.*—In the first place, where a retrenchment of consumption takes place with a view to saving, there is not only a retarded rate of capital formation, but, as we have seen, there is a smaller total expenditure of energy by society—80 per cent instead of 100, in terms of the foregoing illustration. If this meant an eight-hour instead of a ten-hour day for everyone the resulting leisure might be a welcome compensation. But in fact it usually means full employment for the fortunate, stark unemployment for many, and part-time work for others. It is certain to mean more or less privation for those unfortunately placed in the industrial system; and among the masses it means sheer inability to make adequate provision for old age.[2]

In the second place, where the capitalist and the laborer are one and where opportunities for direct utilization of one's own time in the creation of capital goods exist, it is entirely within one's own volition whether he shall or shall not create capital goods and make provision for a higher standard of living in the future, as well as insure against want in his declining years. Under conditions, however, where capitalist and laborer are separate persons, where production is specialized and exchange necessary, the wage-earner is largely debarred from utilizing "off hours" or periods of unemployment in direct capital formation. Because he usually has no land or home where he can employ his spare time, idleness is wished upon him, whether he will or not. A similar situation is true of the salaried classes of the cities. Occupancy of an apartment, or even of a yardless house, closes the door to any direct employment of one's spare hours in the creation of capital goods

[1] See p. 859.

[2] This is of course only one of many causes of unemployment; but it is a fundamental factor that has never been fully appreciated.

that will make for security in old age and at the same time promote economic welfare at large.

In the third place, under conditions where one cannot make provision for his future through the direct process of producing capital goods he is placed at the mercy of the market.[1] That is to say, the provision for the future that is made by a wage-earner or salaried man is not dependent upon whether he spends his "off hours" in work or in idleness; nor is it merely contingent upon whether he refrains from unnecessary consumption. It depends upon industrial conditions in general; for the effectiveness with which individual savings are transformed into capital goods is contingent upon a myriad of forces in a complex social and industrial world. Similarly, the capitalist proprietor or the corporation which creates new "capital" through the process of putting back into the business each year a portion of the earnings is also dependent for the profitableness of this new capital upon the market demand for the product and hence upon industrial conditions in general. While the position of the modern capitalist has less of uncertainty than that of the wage-earner and salaried man, he is not the independent arbiter of his fate in the matter of capital formation, as was the individual enterpriser upon the land under primitive conditions. He is subject to the control of business and trade conditions at large; and the rate of his capital accumulation must wait upon expanding consumption.

c) Is consumption a controlling factor?—We may now turn to a consideration of the evidence that consumption is in fact a controlling factor in connection with capital formation in a specialized society. An explanation is perhaps necessary for devoting space to a point which should be more or less obvious. I have found, however, that there has been relatively little consideration in economic theory of the relationship of expanding consumption to capital formation, and from informal discussion I have learned that many economists are inclined to deny any very close connection and to assume that capital formation can proceed apace in a society that is practicing the most rigid economy in consumption.

[1] It is not to be understood from this phrase that the market is essentially merciless. There are, however, a multitude of factors at work under these conditions which lessen the certainty that postponed consumption will ripen into security for old age.

We may consider first two main reservations to the doctrine that consumption is a controlling factor. The first of these arises from a consideration of the demand for intermediate products. It is urged that the demand for one sort of capital goods constitutes the demand for another kind of capital goods and that such intermediate demand serves quite as effectively as does the demand for consumptive goods to stimulate business activity. This is measurably true of course. At certain periods a rapid increase in capital formation is undoubtedly aided by such demands for intermediate products. But this is at best only a temporary postponement of the check on capital accumulation; it does not eliminate the influence of consumption. It is probable, moreover, that the importance of this demand for intermediate products is greatly overestimated. It seems to be a general assumption that a relatively large portion of the productive energy of society goes each year to the creation of capital goods. It is believed, however, that a study in terms of labor power and material instruments would show so large a proportion of the productive energy of society devoted to the creation of goods for current consumption that consumptive demand would appear always to be the dominant factor in the situation.[1]

In the second place, it is often assumed that society can devote its productive energies for considerable, if not indefinite, periods of time to the creation of new capital, merely with a view to an ultimate increase of consumption; that is to say, there appears to be no reason why society cannot adopt the individual method of saving for a rainy day or old age or for a higher standard of living in the future. Such a policy cannot be worked out, however, where the productive energy of society is apportioned by individual entrepreneurs with whom the motive force to capital formation is private gain. The entrepreneur who assumes the risks and directs the creation of new capital is in quest of profits, and profits from the enterprise can be obtained only from the sale of its products. And since profits will not be waited for indefinitely by those who assist in financing the enterprise it is usually relatively short-time-profit

[1] There has long been needed a study in concrete terms of the actual apportionment of energy between the creation of consumptive and capital goods. Such a study is now being made by Professor H. Gordon Hayes and will shortly appear in this series of articles on capital formation.

considerations that determine the formation of new capital. It is only in rare instances that private initiative will wait long for a return; and even in these cases the anticipation of a steadily developing demand is a *sine qua non* to new capital formation.

Closely related to our present discussion is the old question of overproduction. Taussig's analysis of this problem is perhaps as good as any. He argues that "saving and investment simply mean the employment of labor in a different way"; that the new plant and machinery will shortly be used in making new consumptive goods—goods which can be sold to the laboring classes if offered at a lowered price; and that "until the mass of mankind come to be in vastly more prosperous condition than has been dreamed of in all the utopias, an indefinitely extensible market can be found for goods adapted to their use" (*Principles of Economics*, chap. xli). While this "explodes the fallacy" that a diminution of "luxurious" expenditure will necessarily cause unemployment, it is to be noted that it supplants one kind of consumption with another. Taussig even recognizes that the new consumption by the laboring classes might not permit all the new product resulting from "relentless" saving to be sold "at a profit." In this event he points out that the difficulty is "not overproduction but overaccumulation and overinvestment," whereupon relief will come "quasi-automatically"; for, "as interest fell, more and more of the well-to-do would conclude they might as well spend as invest; would buy houses, pictures, champagne," etc.

It is of note that all this explicitly requires an expanding consumption and is thus in accord with the thesis outlined in this paper. The analysis does not, however, reach the heart of the problem of capital formation in modern industrial society. First, it assumes that the great mass of laborers does not and should not save and make provision for the future.[1] Second, it appears to assume, since it is implied that the process works well automatically, that society as a whole will somehow manage to save such

[1] This is certainly not a situation which should lead economists to pronounce the economic organization of society as on the whole one that promotes the economic well-being of mankind, and it is, of course, an effective estoppel to the argument that the way to economic salvation for the masses is by rigid sacrifice of the present for the future.

amounts as will in the long run direct the proper proportion of productive energy to the formation of new capital and meanwhile (save for temporary maladjustments) always provide full employment for labor—in a word, that there is no danger that the process may result, as was suggested above, in causing the industrial system to run at only 80 per cent speed. Finally, the analysis does not recognize the complications of the problem that inhere in the monetary medium through which savings are effected (see Section IV).

Now as to the evidence that consumption is in truth a directly controlling factor. It is necessary to state in advance that much of the evidence is inconclusive by itself. It is believed, however, that it is on the whole strong enough to throw the burden of proof upon those who hold opposing views. In the first place, then, the periods of the most rapid capital formation appear to have been periods of largest consumption. To mention only a few cases, everyone knows that the decade from 1897 to 1907 was one of tremendous extravagance in this country. It was at the same time, however, a period during which capital was created more rapidly than ever before in our history. On the other hand, the period from 1874 to 1879 was one of low consumption and of a very slow rate of capital formation.

It may or may not be significant in this connection that very thrifty nations like France and Holland have had a less rapid rate of capital formation than more extravagant nations like the United States and Germany.[1]

But perhaps the experiences of the war are more instructive. There developed in 1915 an enormous European demand for the products of American industry. The result of this new market was a tremendous expansion of production. It was not a diversion of energy from one form of production to another; it was a net increase attributable directly to a net increase in consumptive demand. This increase in demand came not only from Europe; it came also from the laboring classes in this country who had been given steady employment and enlarged purchasing power as

[1] To Germany's private consumption must, of course, be added the public consumption in the form of war supplies.

a result of the European demand.[1] This enormous increase of demand not only increased the production in existing industrial establishments; it also led to the rapid creation of new capital. In terms of money savings the compilations of the Treasury Department show that in 1916 the savings from all sources were nearly three times those of a normal year; and that the corporate savings for 1916 were about equal to the entire corporate savings for the years 1910–14 inclusive.[2]

After our own entrance into the war the demand for war supplies was even more intense; it became, in fact, insatiable. Although many of us felt that the slack in the industrial system must have been pretty well taken up as a result of the European demands of 1915 and 1916, events proved the contrary. Monetary savings appear to be much larger in 1917 and 1918 than in 1916;[3] and in spite of large withdrawals of men for military service total production appears to have been substantially increased.

Great Britain's war experience is even more illuminating. The inordinate demands for war supplies soon gave employment to everyone, including women and children. And the increased purchasing power that came to the masses of people in Great Britain resulted during the first year of the war in an actual increase in the output of goods for private consumption—this in addition to an enormous increase in the production of war supplies.[4] And in 1916 the Garton Foundation estimated that although 1,500,000 workers had shifted from peace industry to munitions-making and other special war work in England, and several additional millions had been taken for the armies, England succeeded in feeding and clothing its people not appreciably worse than in times of peace, while manufacturing a sufficient surplus of goods to maintain a very considerable part of the export trade.[5] The lessons of the war

[1] It should be borne in mind here that the increase in prices did not for a considerable period of time result in a decrease in real wages. While prices may possibly have increased more rapidly than wage rates, continuous employment served to make the annual real income of laborers, particularly of families, substantially larger than before.

[2] Unpublished data furnished by David Friday.

[3] *Ibid.*

[4] There is abundant evidence on this point.

[5] Brougham Villiers, *Britain after the Peace*, p. 97.

in England appear to indicate that there must have been a large and constant, though fluctuating, slack in the industrial system in normal times; that a large portion of the unemployment that existed was of a more or less permanent kind, superinduced by the lagging demand for the output of expanding industry.

There is also abundant evidence of the relation of consumptive demand to capital formation in connection with the economic cycle. In periods of depression there is an enormous amount of unemployment and part-time work. In addition there is a general disposition to be economical. And it is not until there occurs an increase in consumptive demand that a revival from a serious business depression occurs. I am referring here to the major fluctuations of trade and industry. In the case of some of the minor fluctuations it is possible that no very direct connection can be shown between an increase in consumption and business recovery. But with the more serious depressions it is usually some fortuitous event which places in the hands of important classes increased consuming power that gives rise to a period of prosperity. It appears to be, moreover, a steadily increasing consumption that is mainly responsible for the continuance of prosperity and new capital formation for considerable periods of time.

The sources of this increased consumption are not always clearly understood. First, when once revival has started there is an increased consumptive demand arising from the fact that millions who have been working, say, two hundred days a year, now work three hundred days a year. Second, large numbers of workers who have been out of employment altogether are now given steady work. Third, women and children in increasing numbers are drawn into industry with a resulting increase in family wages. Fourth, there is extra pay for overtime work. Fifth, an increase of immigration annually adds substantial numbers to the labor force of the country.[1] These increased wages[2] are largely expended in the satisfaction of

[1] Since these immigrants receive higher wages than they had received in the lands from which they came, this means a net increase in the demand for the products of industry.

[2] Recall that it is an increase of real wages (see footnote, p. 860).

consumptive desires[1] and thus tend to keep up the demand for the output of new capital goods.

The foregoing illustrations all point to the relationship of expanding consumption to capital formation. What evidence is there now that a curtailment of or restraint on consumption causes a slackening of the rate of capital formation? A few suggestive illustrations must suffice.

Villiers tell us[2] that in England during the "hungry forties" whenever the prices of foodstuffs rose in consequence of bad harvests, virtually all the income of the English laboring classes went for food, with the result that manufacturing industry everywhere languished and unemployment became widespread. With the falling of food prices a demand again arose for manufactured goods, and employment became once more relatively plentiful.[3] It goes without saying that under such conditions the rate of new capital formation could not be rapid. Where standards of living are high it is difficult to trace a direct connection between a decline in the rate of capital formation and a decline in consumers' demand. The slackening in the rate of industrial expansion might be ascribed to other factors.[4] But where the masses are near the margin of subsistence, as in this English example, the connection appears to be very clearly established.[5]

[1] This matter of consumptive demand is of course not the only factor of importance in connection with the expansion of trade and industry in the upward swing of the business cycle. As Mitchell so well shows, the business cycle is an extremely complicated phenomenon: technological costs, bank reserves, interest rates, social reactions, etc., all play their part. But it is believed that an expanding consumption is a paramount requirement to business expansion and new-capital formation.

[2] In his very illuminating volume, *Britain after the Peace.*

[3] Villiers states that it was this demonstrated dependency of manufacturing upon the demand of the masses for ordinary commodities that induced the manufacturing classes to support the repeal of the corn laws.

[4] And it is certainly often due to other factors.

[5] It seems to me not impossible that the fierce struggle for foreign markets that exists in all thrifty and rapidly growing industrial nations is evidence of restrained consumption or consumption that is not expanding as fast as productive capacity; the effective domestic demand is not sufficient to absorb at a profit all the produce of expanding industry. And it may be that the *total* demand is lagging rather than merely the demand for particular commodities where production has been unduly heavy. The special interests that are in search of foreign markets usually do not

In a period of business depression following a panic we have a good illustration of the effect of lessening consumption on production and hence on capital formation. In the words of Mitchell:

> Consumers' demand declines in consequence of wholesale discharges of wage-earners, the gradual exhaustion of past savings, and the reduction of other classes of family incomes. With consumers' demand falls the business demand for raw materials, current supplies, and equipment used in making consumers' goods. . . . . The contraction . . . . is cumulative, since every reduction of employment causes a reduction of consumers' demand, and every decline in consumers' demand depresses current business demand and discourages investment, thereby causing further discharges of employes and reducing consumers' demand once more.[1]

Another illustration is to be found in our war experience. Immediately after the outbreak of war the President and others urged the most rigid economizing on the part of the American people, and the result was a sharp retrenchment in consumption. Within a few weeks the result of this was manifest in declining sales and lessened production, together with a slackening of ordinary new-capital construction. There was then inaugurated the movement for business as usual[2] as a means of preventing unemployment and of insuring large profits. A retrenchment of consumption thus quickly made itself felt throughout the entire business world.

In conclusion, it is of interest to note that the manufacturing and trading classes have always understood that "times are good" when everybody is purchasing extensively in the markets. And

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reason that exports must be paid for by imports and that hence foreign outlets will not be of real assistance; they regard foreign sales as net gain. This view of the struggle for world-markets is held by many writers on foreign trade—writers outside the ranks of the professional economists and hence unfettered by some of our economic preconceptions.

[1] *Business Cycles*, pp. 577–78. Mitchell tells us, however, that there is no evidence that continued expansion of business is eventually checked, as the socialists have argued, by a failure of consumption to expand (*ibid.*, p. 580). This certainly requires explanation (see p. 876).

[2] As soon as the demand for war supplies became effective the reduced demand of private consumers was of course more than counterbalanced by the increased public demand. Moreover, as in England, the rise of family, if not of individual (real), wages among the war workers served for a considerable time largely if not entirely to offset the fall in demand on the part of those who were led to economize, either voluntarily or involuntarily.

good times with them means not merely large consumption; it means also the ability to lay something by. But the economists, overlooking the obvious facts that periods of great extravagance have usually been periods of rapid capital formation and that periods of low consumption are generally accompanied by retarded accumulation, have usually insisted that there is a peculiar virtue in thrift.[1]

Two factors appear to me to have influenced the reasoning of the economist in this connection. The first is the prevalent fear that there is never any prospect of oversaving; that, on the contrary, there is always the gravest danger that large consumption will divert so much of the energy of society to the creation of consumptive goods that not only will capital accumulation not be rapid, but worse—that the existing capital supply will be worn out without replacement. The economist thus aspires to be more than a pure scientist; he is also a preacher of the gospel of individual economic salvation. The chief difficulty here is that in preaching so ardently we have usually forgotten to be scientific.[2]

The second factor relates to the rôle that money plays in connection with the process of capital formation. It is believed that the institution of money has tended to obscure the underlying industrial factors which we have been considering in the foregoing analysis. Attention must therefore now be directed to capital formation as complicated by the pecuniary mechanism through which it is mainly effected under modern conditions.

IV. RELATION OF MONEY TO CAPITAL FORMATION

In the classical treatment of currency, where money is described as a medium for exchanging consumers' goods already on the market awaiting purchase, there is little intimation that it is related to the productive process; certainly there is little explicit statement that it is through the agency of money that the business manager organizes his business. But the plain facts of the case

[1] The economist has been ably assisted by the investment banker for reasons that are obvious.

[2] The present writer pleads guilty of repeated transgressions in this very connection.

are that in the modern world not only is a large proportion of all saving of that indirect sort which manifests itself in depositing a portion of one's pecuniary income in banks or in investing it in securities, but the business man who transforms these individual pecuniary savings into social capital employs money as the instrumentality for accomplishing this purpose. And where savings are made directly by corporate managers and business enterprisers by retaining in the business a portion of the net earnings the problem is largely the same, for the conversion of these earnings into capital goods is again wrought out through the financial mechanism.

It should be emphasized that under these conditions it remains true that if capital goods are formed, it can only be, as before, through the application to this purpose of a portion of the productive energy of society. The problem is the same as under primitive conditions; only the instrumentalities through which it is accomplished are changed. But where capital formation is effected through the pecuniary mechanism, economists have been prone to forget the underlying industrial factors in the situation and the apportionment of productive energy involved and to think largely in terms of finance. "Saving" means (see students' notes in any course in the elements of political economy) putting the monetary income in savings banks or investing it in securities, where, in addition to being returned in the future for one's uses, it yields interest the while. Unfortunately this analysis is usually not "followed through"; the funds thus saved have been left with the investment banking institutions with the assumption that they will automatically be employed in the creation of capital goods. It is believed that the explanation of this phenomenon may be understood in the light of the succeeding paragraph.

It has been hinted that the monetary mechanism complicates the process of capital formation. Let us see how. On the one hand, unless savings of individual pecuniary incomes are made, funds do not flow to the investment banking institutions; and if the investment banking institutions do not get possession of funds business men cannot obtain the liquid capital necessary to induce a portion of the productive energy of society to be devoted to the creation of capital goods. Under a pecuniarily organized society,

therefore, saving of monetary income is an indispensable prerequisite to the formation of capital. But, on the other hand, if individuals do save and place their money with investment institutions in order to provide the necessary funds for entrepreneurs who wish to induce laborers to create new capital goods, we find that the reduction in consumption necessary for the release of funds with which to divert energy to the creation of new capital goods tends to decrease the profits that may be derived from employment of the new capital; it must be recalled here that the business man who diverts energy to capital formation does so with the expectation of profit, and that the most fundamental determinant of profit is effective demand on the part of consumers. To the extent, therefore, that the saving of monetary funds involves a reduction in consumption there is a check to the effective utilization of the new capital which is to be created through these pecuniary savings. To create capital it is necessary to forego consumption; but to forego consumption is to render unprofitable the creation of the capital.

In the previous section of this paper we had appeared to argue that the way to insure rapid capital formation was to keep consumption large; we now find, however, that curtailment of consumption is, in fact, necessary in order to release the funds required to create capital. We are thus face to face with an extraordinary dilemma. The specialized production and exchange which characterize modern industry, coupled with the monetary mechanism by means of which the apportionment of energy between the creation of consumers' goods and the creation of capital goods is wrought, appear inevitably to retard the rate of capital formation—if not to create an *impassé.*

To retrogress for a moment, I fancy that it is because savings are effected in pecuniary terms that the economist has so commonly failed to appreciate the relationship of consumption to the creation of new capital. What has been seen is that if all pecuniary incomes are spent for consumptive goods business men desiring to create new capital will have no funds with which to enter the markets and secure the employment of the necessary labor power. It would

superficially seem to follow from this that the greater the proportion of current income diverted to investment institutions the greater will be the proportion of our national energy devoted to the creation of new capital. The resolution of industrial factors into financial terms thus appears to have obscured the vital relationship of consumption to capital formation and to have caused us to forget that under a specialized and profit-making industrial organization new capital will not long be created in the face of a lagging consumptive demand.[1]

It is recognized that there is an air of unreality about the foregoing exposition of the relationship of pecuniary saving to the rate of capital formation; it appears to be too strong a statement and not in accord with the facts of recent generations. Capital formation has, in truth, been very rapid in recent times, particularly in the United States. Accordingly, unless there is an error somewhere in the preceding analysis, we must seek an explanation of the apparent anomaly.

In seeking an explanation it must be borne in mind, first, that the mere fact that capital formation has been rapid in modern times does not disprove the conclusions drawn from the foregoing analysis. It is to be expected that the rate of capital formation would increase as the efficiency of capitalistic industry increased. But the real question is, Has capital been accumulating as rapidly

[1] A few illustrations of the results of this on economic theory may prove of interest. J. Laurence Laughlin would have the laboring masses universally comfortable, in a few short generations, if they would only work hard, forego for the time all unnecessary consumption, and invest a portion of their incomes (see *Latter-Day Problems*, p. 83). Alvin Johnson urges that modern protection has tended to divert income from the masses (thereby keeping general consumption low) to the entrepreneur class, which automatically saves large portions of it, depositing it in banks, purchasing securities or, more often, putting it directly back into the protected business. This has "played a part in equipping modern society with the vast stock of capital goods which it now possesses" (see *Political Science Quarterly*, XXIII, 230). Walton H. Hamilton argues that the unequal distribution of wealth which has characterized the nineteenth century has been a potent factor in the rapid accumulation of capital, for it has prevented a rapid increase in consumption and permitted a rapid increase in saving (lecture delivered at the University of Chicago, July, 1917). Both Johnson and Hamilton implicitly assume that rapid capital formation without rapidly expanding consumption can continue for long periods of time because both were discussing the economic development of the nineteenth century.

as it might have accumulated in the absence of the limiting factors which we have been discussing?

In the second place, the monetary mechanism does not create an *impassé* as suggested elsewhere, for the reason that not everybody does save, and, as a result, there is not an entire check to consumptive demand. Some funds are constantly being diverted to the investment banks, and this permits some bidding for the productive energy of society for the purpose of creating new capital goods. But the acceptance of this explanation implies an acceptance of the corollary that, inasmuch as preliminary restriction of consumption is required, capital formation must proceed at a less rapid rate than might otherwise be the case. I believe that this is in general accord with the facts of modern times, particularly under conditions such as have prevailed in England in recent generations with a highly specialized pecuniary order and a fully developed credit system.[1]

Further explanation of the anomaly is that the expansion of bank currency that has come with the gradual perfecting of our credit machinery has made it possible for business men to secure the necessary funds with which to create new capital without antecedent restriction of consumption, and thus without the limiting condition which so materially retards the rate of capital accumulation. It is my thesis that during the period since the Civil War the rapid expansion of bank currency in consequence of a rapidly developing credit organization has resulted in a more rapid formation of capital equipment in the United States than would otherwise have been possible.

V. RELATION OF COMMERCIAL BANKING TO CAPITAL FORMATION

a) *In general.*—The relation of commercial banking to the process of capital formation may be understood only in the light of the analysis of the preceding articles of this series. It must be understood that for the moment we are not concerned with the phenomena of the business cycle.[2] We are considering,

[1] It is less true of the United States for the reason that our credit mechanism has been of tardier development (see analysis in Section V).

[2] The relationship of the business cycle to the problem is considered on page 875.

rather, the period of fifty years following the Civil War taken as a whole. It was during this period that the use of commercial banking facilities became nearly universal in the commercial centers and that the banking frontier of the United States gradually disappeared, resulting in a very great expansion of loanable funds. In 1866 the ratio of reserves to bank loans and investments in all our commercial banking institutions was 22.8 per cent, while by 1916 it had been reduced to 6.0 per cent. Between 1866 and 1916 the amount of cash on hand in our commercial banking institutions increased from $231,900,000 to $1,486,100,000. And during the same period the loans and investments increased from $1,018,000,000 to $24,646,400,000.[1] If the ratio of cash to loans and investments had remained at 22.8 per cent, as it was in 1866, we should have had, in 1916, $6,523,700,000 of loans and investments instead of $24,646,400,000.

What now is the relation of this improving banking organization to the apportionment of human energy between the creation of consumption and capital goods? The heart of the relationship lies in this: That the gradually expanding volume of bank currency—currency, it must be recalled, which is available equally with money for the manifold activities of business—has made it possible for business men to secure the funds with which to induce human energy to create capital goods without antecedent saving on the part of consumers. As a result of this process of expanding the volume of loanable funds, we find that a smaller curtailment of consumption is required in order to release funds for capital formation, thereby permitting the maintenance of a more effective demand for the products of additional capital.

Something more than this brief statement of the case is, however, required. We must inquire whether this expanding credit merely carries with it a general increase in prices. The algebraic expression of the quantity theory throws no light upon this problem because it does not face the question of causal relations between an expanding credit currency and an expanding volume of trade. Nor can one reach an adequate understanding of the relationship of bank currency either to prices or to the volume of production if he

[1] See *Journal of Political Economy* (May, 1918), p. 501.

erroneously assumes that commercial banks extend loans only for commercial purposes. If one assumes that goods are already produced and that the purpose of bank currency is merely to get them exchanged, an increase in bank currency would of course have no bearing upon the quantity of goods. In this connection Laughlin contends that an increase in bank credit does not raise prices, for the reason that the goods are already on the market and that the necessity of exchanging them merely calls forth the bank currency with which to effect such exchange, and that with the completion of the exchange the bank credit is automatically retired. Some of his critics have replied that the goods once exchanged disappear from the marketing process but that the credit once created will continue in the channels of circulation and thus serve to raise prices later, even though its initial creation may not have led to an increase of prices.

Now this controversy appears to be somewhat beside the point when it is appreciated that bank currency is used in the production of goods as well as in their exchange. Concretely, a corporation may borrow $100,000 from a commercial bank, either by selling bonds to the bank or by borrowing on its short-time promissory notes, notes which are indefinitely renewed[1] so far as the system as a whole is concerned.[2] Let us assume that the $100,000 thus

[1] See discussion of this in *Journal of Political Economy*, July, 1918.

[2] From some points of view it is useful to distinguish between fixed and working capital. But from other points of view this distinction has little validity. A modern business has a certain amount of funds of its own, and it borrows the remainder required. Of the funds that it borrows it may use those borrowed through the sale of securities exclusively for fixed-capital purposes, and it may employ the funds borrowed from commercial banks exclusively for working-capital purposes. The theory has been, as heretofore noted in this series of papers, that a hard-and-fast line should be drawn between these respective uses of funds. Suppose, however, a given business does borrow $500,000 of fixed capital and $200,000 of working capital. Suppose, to make the case very concrete, this is received by the business in the form of bills which are put in the cash drawer. Now when the bills are taken out for the making of the necessary payments the clerk gets those which came in from the sales of securities mixed with those that came in as a result of borrowing from the commercial bank, with the result that the $200,000 which came from the commercial bank is used for fixed-capital purposes and that $200,000 of the $500,000 which came from the sale of securities is used for working-capital purposes. Some would be inclined to argue that since this $200,000 had to be paid back in three months and since it had been put to

borrowed is used by the corporation in employing laborers[1] in producing raw materials. Let us assume also that in the absence of this "manufactured" banking currency the business manager would be unable to procure the funds necessary for producing the raw materials in question, for the reason that savings of pecuniary incomes had not been large enough to release the required funds. Under these circumstances the result of the creation and employment of bank currency in the production of raw materials is the creation of goods which otherwise would not be created. The same situation would obviously apply to the hiring of laborers for the construction of a factory. Tangible, material goods would come into existence as a result of the employment of these funds.

It is to be noted now that if this expansion of currency calls into existence new raw materials, it does not, at least immediately, lead to a proportional increase in prices. Both sides of the equation of exchange have been increased. Nor is the objection sound that while the employment of the bank currency may have brought into existence a new quantity of raw materials the currency continues to circulate while the goods do not and that in consequence there is shortly an inflation of prices. For the raw materials, which are dug out of the earth as a result of the hiring of laborers with monetary wages, do not cease to exist as soon as they have been produced. They pass from one form into another through many series of exchanges in the complicated processes of modern production.

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the creation of fixed capital which liquidates itself only after long periods of time, this business would shortly find itself unable to pay its obligations. Now of course the truth of the matter is that it does not make the slightest difference how the particular funds borrowed from the commercial bank is employed so long as the business as a whole is properly organized. And in fact, since the corporation keeps an account with the commercial bank, and since it takes its borrowings from the commercial bank in the form of a deposit account, and since its funds derived from the sale of bonds and stock also take the form of a deposit account it is in practice often difficult for the corporation to know whether it is using the precise funds borrowed from the commercial bank for fixed or working purposes. Checks for both purposes are drawn against a common account. Only where separate accounts in different banks are kept for these funds, or where the funds are procured and used at different times, is it possible to know what specific use is made of the respective borrowings.

[1] These laborers may be drawn from the ranks of the unemployed or from immigration.

There is no more reason to assume that the goods are exchanged but once than that the currency functions but once; both become constituent elements in the whole complicated industrial and financial mechanism. This is not to argue, however, that a creation of bank currency through the processes which have been described and the utilization of it in employing labor which would not otherwise be employed always result in maintaining an equilibrium between the quantity of monetary instruments and the volume of trade. It is not at all improbable that the expansion of the monetary instruments may outrun the resulting increase in the volume of trade. But it seems to be clear from the foregoing analysis that under the conditions of modern business organization, with the gradual expansion of bank currency in the period between the Civil War and the present time, "other things" have not remained the same and that there is, moreover, a causal relationship between an expansion of bank currency and an increase in the volume of trade. Bank currency has provided business with funds which could otherwise have come only through savings; and if these monetary savings had been large enough to permit the rate of business expansion which has characterized the period in question, the foregoing of consumption necessary thereto must have rendered unprofitable much of the business expansion which in fact took place.

b) *Some results.*—It has been suggested by individuals who are of mathematical inclination and disposed to view the economic organization in equilibrium rather than in process that to argue that an increase in the quantity of credit currency increases capital is to argue that we can "beat the game" and raise ourselves by our boot straps. It should, however, be clear from the foregoing analysis of the process of capital formation under a pecuniarily organized and specialized society that this expansion of bank credit merely makes it possible for labor to work more steadily throughout the year and more hours a day. It has enabled society to have a more rapid rate of capital formation than would otherwise be possible, merely because it has decreased the necessity of restricting consumption in order to release funds for new-capital formation.

Is such capital formation, then, the result of sacrifice? The answer depends upon how sacrifice is defined. If it be assumed

that it is a sacrifice for labor to have steady employment throughout the year, then sacrifice is involved. If, on the other hand, it may be assumed that the laboring classes find life easier when there is full-time, steady work for everybody,[1] when consumption is high and some saving possible,[2] then capital formation effected through the process described above does not involve sacrifice, either individual or social. It is obvious enough that there is less social unhappiness in periods of full employment and good times than in periods of slack. It is obvious that there is less social distress, to use our former illustration, when 75 per cent of our energy is devoted to the production of consumptive goods, 15 per cent to replacement, and 10 per cent to the creation of new capital than when 60 per cent is devoted to the creation of consumers' goods, 15 per cent to replacement, and 5 per cent to new-capital formation.

Another significant aspect of the process relates to its effect upon immigration. This expansion of funds available for the manifold uses of business has made it possible to draw vast numbers of immigrants to the United States to do the rough work required; and it has substantially raised the standard of living of the immigrants, while enabling our own laboring classes to find places in the higher and more skilled positions in industry.

The results of this rapid expansion of industry during the period in question have not, however, been altogether beneficial. On the one hand it has tended to accelerate the rate of exploitation of our natural resources. It has meant so rapid a growth of industry that it has carried with it much in the way of waste and much in the way of uncouth materialism. Again it has been instrumental in the enormous growth in the size of industrial establishments with all that this involves in the way of governmental control and regulation. It has also tended to increase the concentration of population in urban communities and thus to create some of our most baffling problems in community life. The stupendous increase

[1] Recall that a lagging demand for the products of new capital does not mean merely shorter hours; it means permanent unemployment for many.

[2] Note that scarcely any saving is possible for the masses when the demand for labor is slack.

of immigration which it occasioned has also tremendously complicated the problems of national development, racial assimilation, and cultural growth.

Perhaps most significant of all, it has intensified the concentration of ownership and the development of an aristocracy of wealth. The enormous expansion of capitalistic industry was profitable only so long as consumption continued high. The thriftlessness of the masses of American people gave the impetus to an ever-expanding capitalistic production, while the commercial banking machinery provided the funds necessary for the development of new capital. While more thrift on the part of the masses would have tended to an equalization of ownership, it would have retarded the rate of capital formation as compared with the rate we have had under the impetus of high consumption and an expanding bank currency. This large consumption on the part of the masses has made it profitable for corporate industry continually to expand through the process of putting funds directly back into the business; it has thus given us vast fortunes for the relatively few and little if any provision for old age for the many.[1]

At the conclusion of this discussion of the relation of bank currency to capital formation I hope my position may be clearly understood. The argument merely is that the expansion of bank currency has played no mean rôle in furnishing the funds required for capital formation; and to the extent that it has thus functioned it has, by relieving the necessity of curtailing consumption in order to release funds, accelerated the rate of capital formation. It remains true, however, that, during the period in question, a large portion of the funds needed for business expansion came from individual curtailment of consumption and investment of monetary income. And to the extent that this was true there was a curtailment of demand and resulting retardation of the rate of capital formation.

[1] The situation as regards the position of the masses must not be understood, however, to be hopelessly bad under the conditions which we have been portraying. It is something to enjoy a relatively high standard of living, even if no provision be made for old age; and, in fact, as we have already seen, there may be some provision for old age even under the conditions described. In any event the condition of the masses has been less insecure than it would have been in the absence of this expanding bank currency and its elimination of the necessity for relentless thrift.

c) *The transitional era.*—It is important to note here that we have been discussing the process of capital formation during a transitional era—during the period in which the use of the commercial banking machinery has been growing more universal and in which the banking frontier has been gradually disappearing. This transitional period is approaching an end, and we shall come to a time when it will be impossible further to decrease the ratio between cash reserves and loans and investments.[1] The organization of the Federal Reserve System, with its economizing of reserves, has extended somewhat the length of the transitional era;[2] and it is possible that it may be extended much farther in the future than now appears likely. But in any event we must sometime face the problem of capital formation under conditions where an expanding banking currency will no longer provide the funds without the necessity of foregoing consumption. It would appear from the preceding analysis that in the very nature of things capital formation must, in the absence of some new motive force to production—that is, some force other than relatively short-run profits—eventually proceed at a substantially retarded rate. The processes of capital formation in the future, as in the past, will, however, be greatly influenced by the phenomena which characterize the business cycle. Accordingly, attention must now be given to a consideration of capital formation as it is conditioned by the business cycle.

d) *The business cycle and capital formation.*—Periods of depression are marked by large bank reserves, because loans are not renewed in consequence of the enormous reduction in consumptive demand and of unsettled conditions generally. There is thus a plethora of loanable funds, and interest rates are low. It has already been pointed out that the development of widespread prosperity usually results from an expansion of consumptive demand which becomes cumulative. Our present problem, however, is to ascertain what governs the duration of the period of prosperity and of rapid capital formation.

[1] This whole discussion obviously raises some interesting speculations as to the relation of a steadily increasing volume of gold to capital formation.

[2] Incidentally, it would be interesting to study the relationship of the expanding volume of bank currency during the war to the increased production of war supplies.

Attention has already been directed to the fact that in the period immediately preceding a crisis there is no evidence of a lagging consumptive demand.[1] The causes of tension in the market are rather to be found on the productive side. The explanation of this apparent anomaly is to be found, at least in part, in the phenomenon of bank credit.

Among the important causes of the rising costs which lead to crisis, Mitchell lists

> the accumulating tension of the investment and money markets. . . . . It becomes difficult to negotiate new issues of securities except on onerous terms, and men of affairs complain of the scarcity of "capital." Nor does the supply of bank loans grow fast enough to keep up with the demand. For the supply is limited by the reserves which the bankers hold against their expanding demand liabilities.[2]

Now whether we are concerned with "commercial" loans or with investments in securities it is to be noted that the crux of the problem lies largely with the reserves of the commercial banking system, for, as we have already found, investment funds are to a large extent derived from commercial bank expansion, either directly by bank investments in securities or indirectly through collateral loans to underwriters, margin speculators, etc.[3]

The large reserves which exist in times of depression are gradually reduced by an expansion of loans during the period of prosperity. Many of the funds which are required for the expansion of business are thus derived from an expansion of credit.[4] It is to be noted here that we are speaking of the elasticity of the commercial banking system—of its ability to stretch to meet the demands of a period of business expansion. This is, moreover, not merely an elasticity to provide the funds for exchanging goods already produced; it is an elasticity which provides funds for investment and productive uses as well as for exchange purposes.

In the absence of this expansion of loans and investments, one or the other of two results must occur in a period of business expan-

[1] See p. 863. [2] *Business Cycles*, pp. 573–74.

[3] See *Journal of Political Economy* (June, 1918), pp. 644 ff.

[4] The ratio of reserves to deposits in the national banking system, e.g., was reduced between 1897 and 1907 from about 18 per cent to about 13 per cent.

sion: First, we would have an early increase of interest rates to a point which would so reduce the profit margins as to deter further expansion; second, we would have to secure the liquid funds required for business expansion by pecuniary saving, which would carry with it a curtailment of consumptive demand. The latter alternative would, however, obviously also check expansion. Hence we may conclude that the expansion of bank credit during the period of prosperity alone permits consumption to continue high even up to the period of crisis; or, to put it in another way, it either prevents interest rates from rising to an onerous level much more quickly than would otherwise be the case or else prevents a decline in consumption (in order to provide investment funds) from being a potent cause of business crisis. To put it in still another way, and in accordance with ultimate results, the expansion of bank credit during the upward swing of the business cycle permits the formation of a large quantity of capital goods which could not otherwise profitably be created.

It is of note, however, that during the prosperity periods of recent business cycles the degree of expansibility of bank credit has been dependent, not only upon the phenomena of the business cycle, but that it is in part due to the steadily improving credit organization of the United States since the Civil War. After our commercial banking machinery is fully developed, therefore, it is probable that the increasing costs in a period of expansion, due to the scarcity of "capital" and rising interest rates, will occur somewhat earlier than has been the case heretofore; or, to put it in another way, the duration of the period of expansion preceding a crisis will tend to be somewhat shorter than it has been in former periods.[1] This may possibly mean, in turn, a less severe depression; and if this, perchance, should prove the case the smaller accumulation of reserve funds during the slack period would in its turn again shorten the period of expansion before the rising costs occasioned by the scarcity of loanable funds could interpose its check to further capital formation. In other words, after the credit system has attained its highest point of development it is

[1] The duration of the period of expansion is of course a result of many factors, and the foregoing relates only to the influence of the conditions of the money market.

not improbable that the fluctuations of business will be somewhat less marked than they have been in the past.

It will always be true, however, that in the ebb and flow of business we shall still find the possibility of periods of relatively rapid capital formation. That is to say, even after our credit mechanism has reached its full development an expanding bank currency during periods of business recovery will provide the funds for new capital formation without a curtailment of consumption and its retarding influence. In every period of depression bank reserves fill up, and in every period of business expansion there is a gradual depletion of bank reserves down to the minimum permitted by the exigencies of the credit machinery.

But while, owing to the phenomenon of the business cycle, we will occasionally have periods of rapid capital formation in a highly developed credit organization we will also have periods of very slow capital formation. During the periods of depression the rate of capital formation is extremely slow, owing, as already indicated, mainly to the inadequacy of consumptive demand that follows the crisis. And taking the business cycle as a whole—the ebb as well as the flow—it would appear that the monetary and credit mechanism does about as much to retard as to accelerate the rate of capital formation.

VI. RECAPITULATION

It will perhaps serve to give definiteness to the purport of the extended and complicated analysis of the preceding pages if the conclusions reached are here gathered up and reduced to summary statement. The significant findings of the analysis appear to be as follows:

1. Capital formation under any form of industrial organization involves an apportionment of the productive energy of society between the creation of consumptive and of capital goods.

2. Under primitive conditions this apportionment is largely effected by individuals through the simple and direct process of devoting those portions of the year which, because of climatic conditions, cannot be utilized in the production of consumptive goods in the creation of capital goods. Under these conditions there is

little deterrent—save shiftlessness—to a rapid increase of productive equipment.

3. In a society where production is specialized and organized on a profit-making basis the process of capital formation is fundamentally changed. Consumption must be curtailed in order to release funds required by entrepreneurs in the creation of new capital; and this curtailment of consumption tends to restrict the profitable use of the new capital and hence to retard the rate at which such capital will be created.

4. The rate of capital formation in our present industrial society is not only a retarded one; it is also an uncertain one, involving a delicate balancing of conflicting opinions and economic desires on the part of the individual units who make up society. On the one hand, if the pecuniary savings of the people chance to be very small, not enough funds are released for the use of capitalists who wish to create new capital—and the high interest rates at the same time act as a deterrent to enterprise. This is overconsumption; and it tends to retard unduly the rate of capital formation. On the other hand, if pecuniary savings are very large and the funds for capitalistic enterprise abundant, the "relentless" saving, or overthrift, that has been involved serves to check the demand for the products of expanding industry and thus again to retard unduly the creation of new capital. A happy medium in the matter of pecuniary saving is therefore required—enough saving to furnish funds for increasing capital but not so much as to restrict unduly the demand for expanding industry. Now it goes without saying that neither the rationalistic reactions of a multitude of individuals in the matter of saving, nor the behavioristic psychology of the masses as conditioned by social and economic environment (whichever theory of individual motivation one may prefer), will serve to furnish automatically the precise amount of saving required in a pecuniarily organized society. It may be true, as the mechanistic economist would suggest, that both undersaving and oversaving tend to be corrected in time, and that an equilibrium is restored through the automatic working of economic forces. Possibly! But society meanwhile pays the costs. And in any event let it be remembered that this best rate of saving does not give us a maximum rate of

capital accumulation; it leaves us with a permanent, though variable, lag in the rate of expansion; and it prevents the continuous use of the full productive capacity of society.

5. Even if pecuniary savings were effected at the precise rate required by the intricate industrial organization of today it would still leave unsolved the problem of making individual provision for old age. The aggregate of individual spending must be kept in accordance with the requirements of the rate at which capital can profitably expand. If everybody attempts to make adequate provision for old age through saving and investment there is certain to follow in good time a curtailment of production that results in unemployment and part-time work, and this not only prevents the masses from making adequate provision for the future, but leads as well to reduced consumption and often to real privation. It is only where the many do not attempt to make adequate provision for old age that the few can amass investments sufficient to insure themselves against the vicissitudes of existence. It would be possible for all to make adequate savings for old age only where savings were equalized among people and the aggregate made to equal the precise amount required. And even then let it be re-emphasized that the rate of capital accumulation would not be such as to give us a full utilization of our productive capacity.

6. The process of capital formation under modern conditions appears certain to lead to ill-balanced social development. Those who bear the brunt of a failure, either of consumptive demand to expand rapidly enough to warrant new capital formation, or of pecuniary savings to be large enough to provide the funds required for new capital formation, are the laboring classes. Business profits are of course affected, often seriously, but the owners of capital are usually enough above the margin of subsistence to prevent privation; inactive business means for them merely lowered standards of living or a retarded rate of saving. But for the masses a lagging industrial demand means unemployment, low wages, and perpetually low standards of living, save during the periods of temporary prosperity that feature the upward swing of the business cycle. Witness in this connection the industrial history of modern England in the last few generations.

7. The rate of capital formation in the United States has been somewhat accelerated by the expansion of bank currency that attended the universalizing and perfecting of our commercial banking machinery. This development will cease, or at least rapidly taper off, in the not distant future.

8. Finally, we may conclude that the organization of business enterprise on a profit-making basis does not promote an efficient apportioning of the productive energy of society between long-run and short-run social requirements. It is essentially visionless so far as the larger national welfare is concerned.

It would seem that it is particularly opportune at this time, when we are about to grapple with the great problems of industrial and social reconstruction which lie before us, that we seek to devise some new machinery for apportioning the productive energy of society between the creation of consumption goods and capital goods. Some means must be developed for maintaining the level of production that has been attained under the impetus of war requirements. If a practicable constructive policy can be formulated for securing the rapid restoration of the capital that has been destroyed by the war and for its extension to meet the needs of future years, and if the opportunity can be provided for everybody to make full utilization of his productive power, we may anticipate not only an early recuperation from the economic devastation of war but also the development of higher standards of living and more widely diffused prosperity for all classes than obtained in the era before the war. If, on the other hand, economic recuperation is merely left to the operation of the "simple and obvious principles of natural liberty," we may confidently look forward to an indefinite period of uncertain and halting economic development—with its complement of political unrest and social disorder.

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